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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,943	09/16/2003	Rolland F. Hebert		3862

29133 7590 12/28/2004  
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EXAMINER

LEWIS, PATRICK T

ART UNIT	PAPER NUMBER
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1623

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

10/663,943

### Applicant(s)

HEBERT, ROLLAND F.

### Examiner

Patrick T. Lewis

### Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 24-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Applicant's Response Dated October 18, 2004***

1. In the response dated October 18, 2004, the specification was amended; claims 14-23 were canceled; and claims 24-31 were added. Claims 24-31 are pending. An action on the merits of claims 24-31 is contained herein below.
2. The rejections of claims 14-18 and 20-23 under 35 U.S.C. 112, first paragraph, has been rendered moot in view of the cancellation of said claims in the amendment dated October 18, 2004.
3. The rejection of claims 14-19 and 21-23 under 35 U.S.C. 103(a) has been rendered moot in view of the cancellation of said claims in the amendment dated October 18, 2004.

### ***Response to Amendment***

4. The declaration under 37 CFR 1.132 filed October 18, 2004 is insufficient to overcome the rejection of claims 14-19 and 21-23 based upon the combination of Gennari US 4,465,672 (Gennari) and De La Cruz et al. Naunyn-Schmiedeberg's Archives Pharmacology (2000), pages 47-52 (De La Cruz) under 35 U.S.C. 103(a) as set forth in the last Office action because: facts presented are not germane to the rejection at issue.

Applicant acknowledges that S-adenosyl-L-methionine is available commercially as a mixture of (S,S)-S--adenosyl-L-methionine and (R,S)-S--adenosyl-L-methionine and

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is sold in an 80:20 ratio by weight (S,S:R,S). Applicant argues, however, that ratio changes over time due to a chemical change called epimerization that results in a change in configuration of the S-adenosyl-L-methionine molecule from its desired (S,S) S-adenosyl-L-methionine conformation to its undesirable (R,S) S-adenosyl-L-methionine conformation while on the shelf. Applicant further asserts, "Up to now, those skilled in the art never appreciated the advantage of the invention although it is inherent."

Applicant's arguments have been considered but are not persuasive. Gennari teaches the use of S-adenosylmethionine salts which are stable indefinitely with time, even at elevated temperatures (Abstract). Gennari explicitly teaches the use of the p-toluenesulphonic acid salt. In the only example set forth in the disclosure, applicant teaches the use of the p-toluene sulfonate salt. Gennari is silent as to epimerization; however, artisans of ordinary skill may not recognize the inherent characteristics or functioning of the prior art. In construing process claims and references, it is the identity of manipulative operations which leads to finding of unpatentability. In the instant case, it does not appear that the claim language or limitations result in a manipulative difference in the method steps when compared to the prior art disclosure.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gennari US 4,465,672 (Gennari) and De La Cruz et al. Naunyn-Schmiedeberg's Archives Pharmacology (2000), pages 47-52 (De La Cruz) in combination.

Claims 24-31 are drawn to a method to treat or prevent a condition of lowered S-adenosyl-L-methionine tissue and blood levels comprising administering to an animal in need thereof an effective amount of a substantially optically pure (S,S)-S-adenosyl-L-methionine or a pharmaceutically acceptable salt thereof or a defined non-racemic ratio of (S,S)-L-adenosyl-L-methionine to (R,S)-L-adenosyl-L-methionine or pharmaceutically acceptable salts thereof. Claims 25-28 limit the ratio of (S,S)-S-adenosyl-L-methionine in the pharmaceutical composition. Claim 29 limits the condition treated. Claim 30 limits the mode of administration. Claim 31 limits the pharmaceutically acceptable salt.

Gennari teaches that S-adenosyl-L-methionine (SAM) participates in a great number of metabolic processes of fundamental importance for the human organism, and consequently its deficiency lies at the basis of many organic malfunctions (column 1, lines 10-65; column 2, lines 33-62). Although the biological importance of this product has been known for some decades, the possibility of testing it and thus using it

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as a drug has existed only in recent years, because of its extreme instability at temperatures exceeding 0° C. It has now been found that stable SAM salts are obtained whenever SAM is salified with 5 moles of an organic sulphonic acid of pK less than 2.5. A particularly useful salt is p-toluenesulphonic acid. Gennari teaches salts intended for use in injectable pharmaceutical forms and oral tablets (column 3, lines 45-51). The activity of the new products have been clinically established in hepatology in the case of acute and chronic hepatic intoxication, in neurology as an antidrepressive, and in osteology in the case of rheumatoid arthritis (column 9, lines 26-34).

Gennari differs from the instantly claimed method in that: 1) Gennari does not teach the use of a substantially optically pure (S,S)-l-S-adenosyl-l-methionine or a pharmaceutically acceptable salt thereof or a defined non-racemic ratio of (S,S)-adenosyl-l-methionine to (R,S)-l-adenosyl-l-methionine or pharmaceutically acceptable salts thereof and; 2) Gennari does not teach a method to treat a condition of lowered antioxidant levels.

De La Cruz teaches that SAM is used to treat liver diseases, as a coadjuvant in antidepressive medications, and has neuroprotective effects in animals. De La Cruz further teaches that SAM shows characteristics of an antioxidant drug and may be able to protect the brain from oxidative damage (page 47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to treat a condition of lowered S-adenosyl-l-methionine tissue and blood levels (including oxidative damage of the brain) by administering to an animal in need thereof an effective amount of a substantially optically pure (S,S)-S-adenosyl-1-methionine or a

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pharmaceutically acceptable salt thereof or a defined non-racemic ratio of (S,S)-l-adenosyl-l-methionine to (R,S)-l-adenosyl-l-methionine or pharmaceutically acceptable salts thereof. Although the prior art does not explicitly teach the ratio of the (S,S) vs. (R,S) isomer, SAM is known in the art to treat conditions of lowered S-adenosyl-l-methionine tissue and blood levels. The optimization of the (S,S) vs. (R,S) ratio of the prior art composition is seen to be well within the purview of the skilled artisan, as the separation of (S,S)-l-adenosyl-l-methionine and (R,S)-l-adenosyl-l-methionine was known in the art at the time of the invention. It is widely known in the pharmaceutical arts that the biological activity of compositions containing stereoisomers is often due to the presence of one isomer versus another. The determination of active isomer is also within the purview of the skilled artisan. One of ordinary skill in the art would have been motivated to optimize the isomeric ratio in order to reduce the amount of therapeutic agent administered during treatment and to reduce possible side effects associated with the non-active isomers.

### ***Conclusion***

8. Claims 24-31 are pending. Claims 24-31 are rejected. No claims are allowed.
9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.




**Contacts**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick T. Lewis whose telephone number is 571-272-0655. The examiner can normally be reached on Monday - Friday 10 am to 3 pm (Maxi Flex).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick T. Lewis, PhD  
Examiner  
Art Unit 1623

  
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